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[54] **AUTOMATED ENCODED SIGNAL COLOR IMAGE COMPOSITING**

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[58] **Field of Search** 358/22, 40, 81, 82, 358/183

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[57] **ABSTRACT**

A method and apparatus to cause a colored backing to be replaced by a background scene, such that the composite scene shows no loss of detail, no edge anomalies, no evidence of a colored backing having been present, and no evidence that the final scene is a composite, even when the foreground scene contains fine strands of hair, glassware, smoke, fog, or other semitransparent subjects. Control signals E_b and E_c are created to cause the foreground and background scenes to mutually interact in a natural manner, so that shadows on the colored backing appear as shadows on the background scene, and the luminance of the background selectively causes back and edge lighting of foreground subjects. The hue and luminance of the colored backing are continuously and automatically tracked and removed by a subtraction process. The background level is automatically held constant even though backing illumination changes. Hue and luminance removal and background level are controlled by comparators (**35,36**) and digital counters (**39,40**). Levels set by the automatic circuits are retained when the camera pans off of the (blue) backing. No disturbance occurs to the picture when the camera returns to the backing. Digital memories have manual override (**64**), allowing the creation of night scenes and other special effects. Chroma and luminance removal are performed by a subtraction process on the encoded video signals in both the NTSC and PAL systems. Chroma removal in the PAL system is accomplished by independently tracking (**115, 116**) the chroma of each line, and is not affected by PAL quadrature errors. The blue cast on foregound subjects caused by lens flare and secondary illumination of the subject by the blue backing is removed from the composite image. Such discoloration of the subject may also be removed (**121, 122**) from the subject in the foreground scene when it is not being composited.

40 Claims, 4 Drawing Figures